



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,116	06/26/2003	Michael J. Berman	03-0538	3693

24319 7590 07/23/2004

LSI LOGIC CORPORATION  
1621 BARBER LANE  
MS: D-106 LEGAL  
MILPITAS, CA 95035

EXAMINER

NGUYEN, GEORGE BINH MINH

ART UNIT	PAPER NUMBER
----------	--------------

3723

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/607,116	<b>Applicant(s)</b> BERMAN, MICHAEL J.	
	<b>Examiner</b> George Nguyen	<b>Art Unit</b> 3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

Art Unit: 3723

**DETAILED ACTION**

Claims 1-8 are presented for examination.

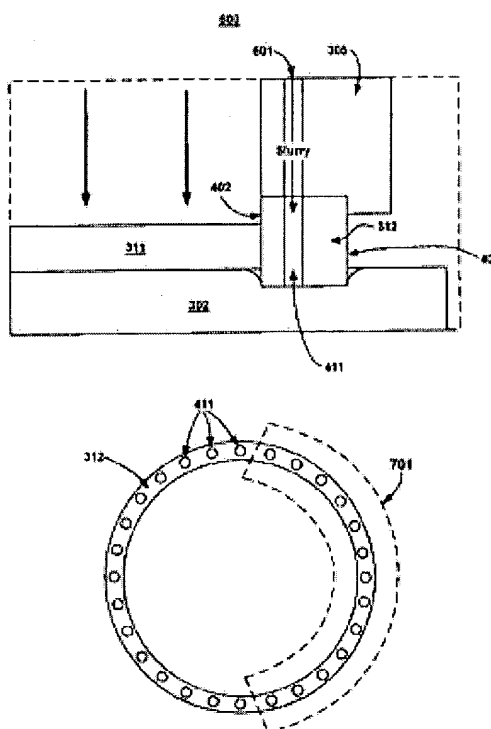
***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drill'6,347,979 in view of Tanaka'5,902,173.

With reference to Figure 6B, col. 7, lines 47-56, Drill discloses the claimed invention except for the at least one channel in communication with the plurality of outlets 411.

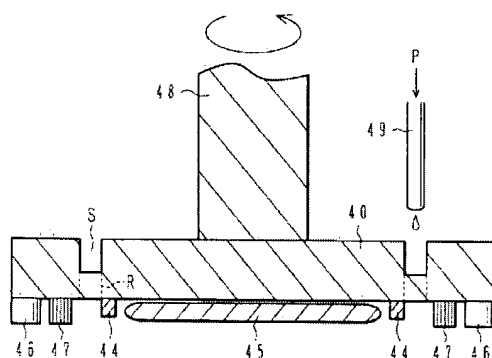


With reference now to FIG. 6A and FIG. 6B, FIG. 6A shows a side cut away view of wafer 311 and dispensing ring 312, as wafer 311 and dispensing ring 312 are positioned on top of pad 302. FIG. 6A also shows an area 600, which is shown in greater detail in FIG. 6B. As depicted in FIG. 6B, area 600 shows wafer 311 receiving a downward directed force from the carrier (not shown). Wafer 311 is confined in place on pad 302 by inner radius surface 402. Dispensing ring 312 receives a downward force from arm 306 and is pressed into the resilient surface of pad 302.

In the present embodiment, arm 306 includes a plurality of slurry passages (e.g., passage 601) which align with each of the slurry dispense holes 411. CMP machine 300 pumps slurry through the slurry passages 601, through the slurry dispense holes 411, onto pad 302, and into contact with wafer 311.

Art Unit: 3723

With reference to Figure 22, col. 7, lines 43-59, Tanaka teaches that it is known to have utilized at least one channel S in communication with a number of holes R so that polishing agent P can be supplied therefore from a dispensing nozzle 49 to the wafer 45 via the groove S and holes R. The advantage is to provide a uniform slurry supply to the holes.



The feature of the tool/wafer holder 40 shown in FIG. 23 is that a tool holder unit 40b with a lapping tool 46 is rotated independently from a wafer holder unit 40a with a brush 47. 45 Specifically, the lapping tool 46 is adhered to the bottom of the tool holder unit 40b which is mounted covering the wafer holder 40b, whereas the brush 47 is adhered to the bottom of the wafer holder unit 40a. The tool holder unit 40b is rotated by a rotary shaft 48b disposed coaxially with, and outside of, a rotary shaft 48a for rotating the wafer holder unit 40a. A groove Sa is formed in the tool holder unit 40b, and a groove S corresponding in position to the groove Sa is formed in the wafer holder unit 40a. A number of holes R are formed in the groove S, opening to the bottom surface of the wafer holding tool 40a. Polishing agent P can be supplied therefore from a dispensing nozzle 49 to the wafer 45 via the grooves Sa and S and holes R. 55

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the wear ring 312 Drill with one common inlet S as taught by Tanaka in order to provide a uniform slurry supply to the holes.

Regarding to the method claims, the steps would have been obvious by the functions of the prior art apparatus.

### Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Inaba et al.'725, Lin et al.'582, Kim'392, Cheng'409, Brigante et al.'020 all disclose wear ring with slurry supply channel.

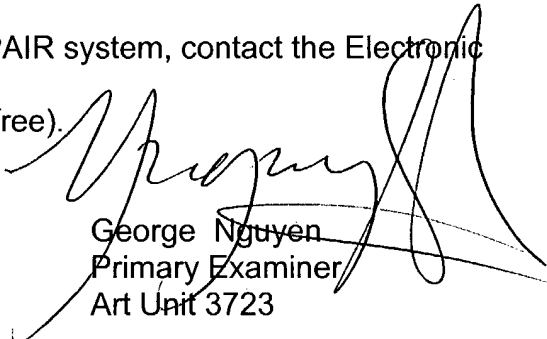
Art Unit: 3723

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Nguyen whose telephone number is 703-308-0163. The examiner can normally be reached on Monday-Friday/630AM-300PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 703-308-2687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**GEORGE NGUYEN**  
**PRIMARY EXAMINER**



George Nguyen  
Primary Examiner  
Art Unit 3723

GN – July 21, 2004